

VI. *The food-plant of Callophrys avis.*

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I TOOK my first specimen of *Callophrys avis* at Hyères in 1906 and a second in the same district in 1907. In 1909 I took it at Amelie-les-Bains and there found its food-plant to be *Coriaria myrtifolia*; Prof. Reverdin took a specimen near Cap Negre (some 20 km. east of Hyères), so that the capture of three specimens in the Hyères region of the Riviera made me feel sure that *Coriaria* must grow there, and the statements of the botanists that it did not, led me to think it might be possible they had overlooked some restricted colonies of the plant.

In 1910 and 1911 I visited Hyères at the proper season in hopes of solving the questions raised, did *Coriaria* grow near Hyères? had *avis* some other food-plant in that region?

In 1910, I utterly failed to meet with a single specimen of *C. avis*, and though bad weather might account for this to some extent, it proved that *C. avis* was very rare there, for I certainly worked over the ground where I had previously taken it, though, as a matter of fact, I did not know the spots with any precision. I satisfied myself that there was no *Coriaria* anywhere near where I had taken the butterfly nor anywhere in the district in which Prof. Reverdin's specimen was taken. There was therefore certainly an alternative food-plant. In 1911 I again tried to investigate this point, but again bad weather may take some blame for my failure to secure the first step in the investigation, viz. to meet with *C. avis*. At the end of the season, with fear of being too late, I went to Amelie-les-Bains and succeeded in obtaining a few eggs of *C. avis*, with a view to approach the problem in another way.

A point by the way is interesting.

I brought home two *C. avis* ♀♀ taken on April 28. One of these proved to be infertile and died on May 23.

The other one laid two eggs about May 22, and three afterwards (about May 30), was still alive on June 1, but died by June 3. It thus lived five weeks in captivity.

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Amongst the *Coriaria*, both growing and that gathered for food for *C. avis*, a noctua larva spinning the leaves together was not uncommon, these were assumed from their appearance to be *Orthosia fulvago* (*cerago*), but on emergence proved to be *O. lota*, of very large size and highly variable in colouring. Milliere records the larvae of *O. lota* as common at Cannes on the "Roudou" (*Coriaria*).

Assuming these larvae to be *fulvago* (and had I known they were *loti* the result would have been the same), I concluded that *Coriaria* as a food-plant must have something in common with sallow. On trial, the *loti* took sallow readily, but *C. avis* would not try it, but seemed to find osier (*Salix viminalis*) with which I also supplied them, as much to their taste as the *Coriaria*. The question of providing them with food at Reigate was thus much simplified. Had I also answered the question of the alternative food-plant? I felt quite sure that I had not, because in that part of the Riviera, salallows and willows of all sorts are rare, osiers perhaps especially, and are quite absent in the places where *C. avis* had been taken. I offered the larvae of *C. avis* many other plants, trees and shrubs, with the result of uniform refusal to look at them, until I offered them *Arbutus*, the young shoots of which they took to with great readiness and fed and thrived on them as well as they did on *Coriaria* or osier. *C. rubi* took both osier and *Arbutus* but not very willingly, and on *Arbutus* failed to thrive and finally refused it.

Admitting that I may be in error, I feel satisfied that the food-plant of *C. avis* on the Riviera is *Arbutus unedo*, which grows in each of the spots where *C. avis* has been taken.

An interesting point arises here in regard to the distribution of *C. avis*. Both *Coriaria* and *Arbutus* are plentiful enough about Cannes, yet I think we may assert that *C. avis* has never been taken there. Cannes has been well-worked by many entomologists, foremost amongst whom stand Milliere and Constant. I never met with it there myself nor in the Esterel where *Ch. jasius* occurs freely, and one would attribute a more southern constitution to *Ch. jasius* than to *C. avis*. There is something still to be discovered as a governing fact in the distribution of *C. avis*. I found, for instance, that large areas of *Coriaria* in the valley of the Tet, only a few miles from

Amelie-les-Bains as the crow flies, seemed to be entirely uninhabited by *C. avis*. Of course this may not be so, my last two years' researches at Hyères would of course lead to the erroneous conclusion that the species does not occur there, and further examination may show that it occurs though rarely in the Tet Valley.

Vernet-les-Bains is in the Valley of the Tet, but much higher up than the *Coriaria* ground, or than one would expect *C. avis* to appear at.

P.S.—Mr. H. Powell writes under date April 7, 1912, that over a dozen *C. avis*, of which he took some, have been taken at Cap Negre, "all near one place flying round and settling in large *Arbutus* trees;" he also took an odd specimen some distance up the hill near Cavaliere, flying round an *Arbutus*. The butterflies are reported as being confined to a very small area. This seems to give the required confirmation to the conclusion I drew from my observations that the food-plant of *C. avis* on the Riviera is *Arbutus*.

It is, of course, quite possible there may be still another one.